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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

Thursday, September 7, 1995

Mr. William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, NW  
Washington, DC 20544

DOCKET FILE COPY ORIGINAL

**RE: CC Docket No. 92-297, PP-22**

Dear Mr. Caton:

Enclosed please find an original and five (5) copies of Titan Information Systems Corporation's ("Titan") Comments in the above-referenced rulemaking proceeding. Please note that since this filing was made by facsimile, Titan will follow-up by submitting an original signature page to the Commission.

Please direct any questions regarding this matter to the undersigned.

Sincerely,

A handwritten signature in cursive script, appearing to read "Charles F. Newby", written over a horizontal line.

Charles F. Newby  
Vice President

Enclosures

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Before the  
**FEDERAL COMMUNICATIONS COMMISSION**

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

Washington, D.C. 20554

In the Matter of

Rulemaking to Amend Parts 1, 2, 21 and 25  
the 27.5 - 29.5 GHz Frequency Band, to  
Reallocate the 29.5 - 30.0 GHz Frequency  
Band, to Establish Rules and Policies for  
Local Multipoint Distribution Service and  
for Fixed Satellite Services

and

Suite 12 Group Petition for Pioneer's  
Preference

CC Docket No. 92-297

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PP-22

**COMMENTS OF  
TITAN INFORMATION SYSTEMS CORPORATION**

September 7, 1995

Titan Information Systems Corporation  
3033 Science Park Road  
San Diego, CA 92121  
Telephone (619) 552-9797  
Fax (619) 597-9055

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

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	)	
Rulemaking to Amend Parts 1, 2, 21 and 25	)	CC Docket No. 92-297
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	)	
and	)	
	)	
Suite 12 Group Petition for Pioneer's	)	PP-22
Preference	)	
_____	)	

**COMMENTS OF  
TITAN INFORMATION SYSTEMS CORPORATION**

**1 Introduction.**

Titan Information Systems Corporation ("Titan") respectfully submits Comments to the Federal Communications Commission's ("Commission") Notice of Proposed Rule Making ("MPRM") in the above-captioned proceeding. Titan has a strong interest in the Commission's rule making regarding the Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 29.5 - 30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services and Suite 12 Group Petition for Pioneer's Preference because of Titan's substantial involvement in and familiarity with the development, manufacture, sale and service of systems and technologies used in the delivery of communications services proposed by the Commission within these bands. Titan's primary interest in the instant proceeding is to place into the public record information that will guide the Commission to set rules that promote near and long-term competition for consumer information services in these frequency bands.

Titan Information Systems Corporation, through its parent The Titan Corporation, has a long history in the design, development, manufacture and service of advanced communications systems using satellite, microwave, optical and wireline propagation means. Importantly, Titan Information Systems Corporation, was formed, in part, in order to deploy its pioneering Video PassPort™ conditional access/encryption technology into multichannel television transmission equipment for Satellite, Cable, Video Dial Tone, Multipoint Microwave Distribution Service and Local Multipoint Distribution Service (“LMDS”) systems in the U.S. and internationally. Titan has committed considerable research and development resources to develop a conditional access/encryption system that meets the unique requirements of LMDS. In fact, Titan is the first supplier of Conditional Access/Encryption Systems that meet the unique requirements of LMDS multichannel television transmission systems. Titan’s Conditional Access/Encryption system is currently in commercial operation in CellularVision’s New York system. It is from this vantage point that Titan respectfully offers the Commission comments concerning the technical and economic impact of the Commission’s proposals in the instant proceeding.

## **2. Comments to Issues Raised By This NPRM.**

In general, Titan supports the Commission’s proposal to license the 27.5 - 30.0 GHz band for multiple commercial uses. However, the Commission raises some very serious issues in the instant NPRM and asks for comment. Titan respectfully submits the following comments.

### **2.1 Band Segmentation Plan.**

Titan generally agrees with the Commission’s conclusion that denying one or another of the proposed services in the 27.5 - 30.0 GHz frequency band would not be in the public interest. However, Titan is concerned that in order for LMDS to be competitive with the cable, Direct-Broadcast-Satellite (“DBS”) and other Direct-To-Home (“DTH”) services currently in operation or planned, the 850 MHz of spectrum that the Commission has allocated for primary LMDS service may not be sufficient for LMDS to construct a competitive service. Today’s upgraded cable systems typically offer more than 60 channels, thus the 42 channels that can be offered in 850 MHz will seriously disadvantage LMDS service operators.

Titan maintains that at least 1000 MHz is needed in order for LMDS operators to offer service that is economically competitive with U.S. cable operators. While Titan strongly prefers that the Commission allocate 1 GHz contiguous to LMDS, it is Titan’s position that the prompt deployment of LMDS systems in the 28 GHz band throughout the United States is vital and will be jeopardized by several more years of administrative litigation. Therefore, in the spirit of cooperation, Titan supports the Commission’s proposal at paragraphs 47 and 59 to designate

850 MHz at 27.5-28.35 GHz to LMDS on a primary basis, and 150 MHz at 29.1-29.25 GHz to LMDS and Mobile Satellite Service ("MSS") Feeder Links on a co-primary basis. In order for LMDS services to use this spectrum, provisions must be made so that LMDS and MSS service operators coordinate their use of this spectrum. The Commission should recognize that the value of that 150 MHz to an LMDS operator, if there are severe encumbrances related to such coordination, is uncertain. Accordingly, the Commission should recognize the need of LMDS operators to utilize this spectrum with a minimal amount of operational constraints. Titan urges the Commission to monitor the frequency sharing plans and operations of the various LMDS and MSS operators going forward and to set any new rules that may be required to make the 150 MHz block usable for LMDS service.

## **2.2 CellularVision's Pioneer's Preference.**

Titan supports the Commission's tentative decision to award CellularVision of New York a pioneer's preference license. Also, Titan believes the Commission's approach in its tentative decision grandfathering CellularVision of New York's service in the New York PMSA in the 27.5-28.5 GHz band for 36 months after final LMDS rules are adopted or until the first geostationary fixed satellite service ("GSO/FSS") is activated, whichever is later, is fundamentally sound.

## **2.3 Spectrum Licensing for LMDS**

Titan concludes, as the Commission does, that LMDS will be competing in a multichannel television distribution market. The Commission seeks comment as to the amount of spectrum that should be issued to each LMDS licensee. As the Commission points out, LMDS will be competing as a fledgling service with not only entrenched cable operators but with new delivery technologies such as DBS, video dial tone and new wireless services. The Commission should not be persuaded by arguments that assert that digital video compression technology will allow LMDS operators to offer hundreds of television channels in only a few hundred megahertz. With respect to the Commission's questions concerning digital technology in paragraph 78, as companies involved in the LMDS industry have argued, digital LMDS only becomes viable when it becomes commercially and economically feasible. Titan's position is that the commercial marketplace, and not the Commission, should determine when digital compression technology becomes a commercially and economically viable option for LMDS operators. As the Commission is well aware, digital video compression technology is to date unproved for terrestrial transmission systems and equipment costs are likely to be three to four times more expensive than comparable analog equipment. Thus, the Commission should not

burden LMDS with the necessity of using digital video technology in order to aggregate enough television channels for competitive viability.

The LMDS industry has maintained throughout this proceeding, and Titan's competitive market analysis shows, that a minimum of 1 GHz of bandwidth is needed for LMDS operators to compete with coaxial and fiber optics-based TV delivery systems, who also use a minimum of 1 GHz of bandwidth. Titan's analysis shows that the 49 television channels allowed by combining the primary and co-primary LMDS spectrum into 1000 MHz and by the use of narrowband FM modulation represents a minimum number of channels required to compete with U.S. cable operators in most medium and large television markets. Titan believes that unless the Commission makes available 1000 MHz to each LMDS operator, LMDS will not be able to reach economic viability. Indeed, prospective LMDS operators will be unwilling to make the substantial capital investment required to bring this new technology into the mainstream.

#### **2.4 Geographic Service Area.**

Titan concludes as the Commission does that the size of the Basic Trading Area ("BTA") is the best geographic area for licensing LMDS.

#### **2.5 Competitiveness Issues.**

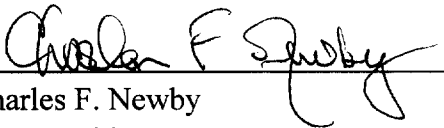
Titan does not offer comment on the many competitiveness issues that the Commission raises in the instant NPRM except to request that the Commission adopt rules that will foster long-term competition within the multichannel television distribution markets served by LMDS operators.

### **3 Conclusion.**

Titan respectfully recommends that the Commission adopt rules consistent with the Comments herein in order to ensure the greatest public benefit.

Respectfully submitted,

**TITAN INFORMATION SYSTEMS CORPORATION**

By:   
Charles F. Newby  
Vice President

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